

THE OPTICAL MAGIC LANTERN

JOURNAL

AND

PHOTOGRAPHIC ENLARGER.

EDITED BY J. HAY TAYLOR.

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Notices.

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NOTICE.

MANY CORRESPONDENTS STILL FORWARD THEIR COMMUNICATIONS TO THE OLD ADDRESS. WILL THEY PLEASE NOTE THAT OUR ADDRESS IS
56, CHANCERY LANE, LONDON, W.C.

Notes.

In reply to the article on page 65 of our last issue, respecting a new name for *magic lantern*, we have received the following names, whilst a number of readers state that to adopt another name for the useful apparatus so long known as *magic lantern*, would be an impossibility.

Artopticon.
Auditorial Lantern.
Deluminator.
Depictive Lantern.
Demonstrating Lantern.
Diverging Lantern.
Entertaining Lantern.
Educating Lantern.
Educational Lantern.
Elucidating Lantern.
Helioscopic Lantern.
Illustrating Lantern.
Illustration Projector.
Lantern of Truth.
Lecture Lantern.
Lecture Illustrator.
Megopticon.
Megascene Apparatus.
Ne Plus Ultra Lantern.
Opticon Lantern.

Opticon.
Optical Scenoscope.
Optical Projector.
Optical Universal Lantern.
Optical Instructive Lantern.
Photographic Enlarger.
Pictorial Lantern.
Prima Donna Optical Lantern.
Polyopticon Photoprojector.
Photo-opticon.
Projecting Lantern.
Scenic Projector.
Sciopticon.
{ Unopticon.
 Biopticon.
 Triopticon.

Many who have suggested names, say (and truly so) that everybody knows what a *magic lantern* is, and to give a new name to an apparatus so well known under its present one would only result in a general misunderstanding for many years to come. The general verdict seems to be "Let well alone, and call a *magic lantern* a *magic lantern*."

A BOOK-CASE has been presented to the Newcastle-on-Tyne Photographic Association, and gifts of books on photographic and cognate subjects are solicited. Mr. E. G. Lee, 11, Beverley Terrace, Cullvercoats, Newcastle-on-Tyne, is Hon. Secretary.

In a former issue we stated that we understood that Messrs. J. B. Colt, of Beekman St., New York, had discontinued fitting projection lanterns with parabolic reflectors. We received this information at the time from a prominent American lanternist, and had no reason to doubt it. Messrs. Colt write to inform us that this is an error, as they are selling more than ever, and that they are gaining a popularity with their customers, parties sending their lanterns to have 2, 3, 4 and 5 wick lamps removed and taking the parabolic lamp in place of them.

A SHORT time ago a few friends took a trip up the Thames in a steam launch, and a lantern manufacturer (of not more than ten miles from Waterloo Bridge) who always wears a hat of clerical shape, was one of the party. Imagine the amusement (those who know him) created, when a lady present audibly whispered to her neighbour. "Is that your minister?" Explanations and laughter followed.

WE hear good accounts of the Ashton-under-Lyne Photographic Society. The Hon. Sec., Mr. Robt. T. Mainland, is fairly in his element at the lantern, consequently with him at the helm, and a supply of good slides by the members, their lantern nights could not be other than a success. Their first summer ramble, on 22nd ult., was to Marple.

THE inmates of the Rye Union Workhouse were on 4th ult. treated to a lantern entertainment by Mr. W. Stocks, who exhibited a number of coloured slides of Scotland, lent by Mr. T. H. Holding, Vice-president of the Lantern Society.

LACK of interest and failure to secure suitable premises has brought about the dissolution of the Dundee Amateur Photographic Association.

WE learn that Mr. Lawson has sold the patent of his saturator to Messrs. Riley Bros., of Bradford, and that he has entered into an engagement with this firm to superintend the manufacture of this apparatus.

Oxy-calcium Lamp.

A NEW PRINCIPLE.

IN the oxy-calcium lamp in general use, a stream of oxygen is blown from a small jet through the flame of a spirit lamp, and the flame allowed thus to impinge on a cylinder of lime. In order to obtain a satisfactory light by this method there must be a large flame, and the wicks should be so manipulated that they are bent towards the sides so as to permit of the oxygen being blown in the flame only, without coming in contact with the wick. If the wick happens to get in the way of the stream spoken of, it is rapidly consumed, the flame from it becomes smaller and the light deteriorates.

Should lamps of this description be used for a double lantern, we have, as soon as the oxygen supply is cut off from one, an uncomfortably large spirit flame, so that whilst that particular lantern is off, the spirit is being consumed to the same extent as if the jet were used with the oxygen turned on, consequently for dissolving views the spirit jet has met with disfavour.

Mr. A. A. Wood, of 74, Cheapside, a great user of and believer in spirit jets, experiencing the difficulties spoken of, sometime ago undertook a series of experiments to endeavour to make the spirit jet answer for dissolving views, and judging by the jet of his make which we have tried, we have concluded that he has solved the problem.

This new style of jet has a hollow wick $\frac{3}{4}$ inch diameter, which is placed in a wick chamber and is surmounted by a dome provided with a hole of about $\frac{3}{8}$ of an inch in diameter, so that the wick does not project.

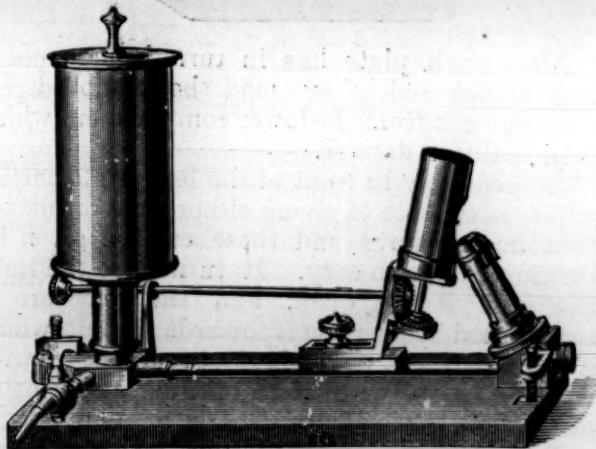
The oxygen supply B is conducted to the centre of this hollow wick C; the spirit flows



through a pipe A, which encases that through which the oxygen passes, and remains at the level of E; the perforated dome top being shown at D. The sides of the wick chamber are of glass, so that the height of the spirit can be seen at a glance, thus preventing all chance of an overflow.

When lighting this lamp, the oxygen is turned on slightly and a light applied; the oxygen can now be turned off, when a small bead of flame will be found burning at D. It is quite

unnecessary to manipulate the wick spoken of, and it is merely necessary to turn on the oxygen to render the lime cylinder incandescent, and the more the oxygen is turned on, so does (to a certain extent) the spirit flame enlarge. If the oxygen be turned completely off, the flame relapses to the small bead spoken of, consequently it will be seen that a jet of this character is excellent for a double or triple lantern, for no sooner is the oxygen turned off than the spirit flame immediately becomes reduced to a mere speck, consuming little or no spirit. The following cut shows the complete



jet, the spirit being contained in the usual form of fountain reservoir. The oxygen supply is attached to the tap at the side, and the lime pin provided with a shield is inclined at the requisite angle to produce the best light.

—:o:—

Crystal Palace Photographic Exhibition.

ALTHOUGH this exhibition, which was held from the 10th—29th ult., was not on the large scale of those previously held at the same building, still it created a great deal of interest. The entries of photographic prints, although not so large as formerly, were nevertheless of great interest, and were displayed to the best advantage.

The lantern slide exhibition which was held each evening in the theatre was well attended, and many had to be refused admittance for want of room. Over fifteen hundred slides had been sent in, and about a couple of hundred of these were projected upon the

screen each evening. The applause given testified to their excellence.

The exhibition of apparatus was small, but attendants were kept busy explaining and demonstrating to interested visitors.

At the stand of Messrs. R. & J. Beck, their "Frena" hand-camera (described in our issue for October, 1892) was the centre of attraction.

A large and varied exhibit was on the stall occupied by Messrs. Theobald & Co., and consisted of lanterns, slides, cameras, lenses, and the hundred and one other articles seemingly required by the amateur protographer of the present day. Artists were at work showing how lantern transparencies were coloured, mounted, and finished. A new and inexpensive hand-camera, termed the "Meteor" seemed to have a fascination for visitors.

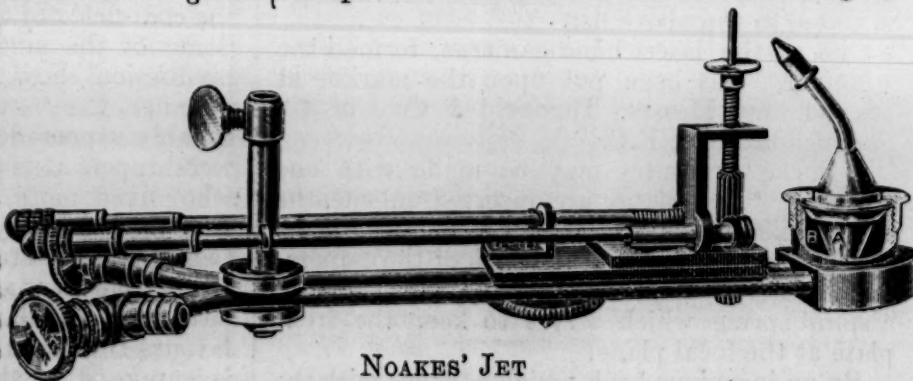
As on former occasions, Messrs. D. Noakes & Son had turners and cabinet makers at work making and fitting up the respective parts of lanterns and cameras. Some fine lanterns were also on exhibition; while Mr. D. Noakes at various times demonstrated a new form of jet which he had recently patented, the chief points of which lay in the construction of the mixing chamber. The oxygen and hydrogen on entering the chamber B have, on striking the cone, a "swirling" action imparted to them, and thence entered the chamber A by a small hole at the bottom of the cone. By the use of these double cone mixing chambers it is claimed that the light is improved and a noisy jet made silent.

The other exhibits were a series of frames and moulding by Messrs. Couch.

Castings, parts, and fittings for those desirous of constructing lanterns or cameras were exhibited by Messrs. Platt & Witte, on whose stand was also shown Clarkson's "Duplex" Regulator, and filled safety gauge for gas cylinders.

Enlarging, by the Cresco Fylma Co., was shown, in which the film underwent a swelling or stretching operation.

The Incandescent Gas Co. had a series of lamps and reflectors fitted for showing the



NOAKES' JET

mode of illumination for a sitter. The light was powerful and subdued.

Bamboo stands for lanterns, screens, and cameras, were shown by Messrs. Cheney; also a compact bag or case for changing plates.

Stereoscopes and slides of an interesting character were displayed by Messrs. Lewis.

On the last stall was a collection of mixed and blow-through jets by Mr. F. Brown, and an ingenious mechanical album by Madame Lesuisse.

At another part of the Palace from the photo exhibits the Anschutz Electric Wonder delighted such as dropped a penny in the slot to see what the attendant described as the life-like movement of photographic figures.

—:O:—

Hand-Cameras for Obtaining Slides for the Lantern.

	"Facile"	.. (Fallowfield)	see March 1st, 1890
No. 1	"Giah"	.. (Mawson & Swan)	" May 1st, "
" 2	"Quadrant"	.. (W. H. Humphries & Co.) ..	" June 1st, "
" 3	"Eclipse"	.. (J. F. Shew & Co.)	" July 1st, "
" 4	"Eureka"	.. (W. W. Rouch & Co.)	" Aug. 1st, "
" 5	"Key"	.. (Platinotype Co.)	" Sept. 1st, "
" 6	"Optimus"	.. (Perken, Son & Rayment) ..	" Oct. 1st, "
" 7	"The Griffin"	.. (Griffin & Sons, Limited) ..	" Nov. 1st, "
" 8	"The Swinden-Earp" Patent		" Dec. 1st, "
" 9	"Collins"	.. (C. G. Collins)	" Feb. 1st, 1891
" 10	"Kodak"	.. (Eastman Co.)	" Mar. 1st, "
" 11	"Guinea"	.. (Walter Griffith)	" April 1st, "
" 12	"Vanneck"	.. (Watson & Sons)	" May 1st, "
" 13	"Chadwicks"	.. (W. I. Chadwick)	" June 1st, "
" 14	"Bonanza"	.. (R. & A. J. Mercer)	" July 1st, "
" 15	"Repeater"	.. (J. F. Shew & Co.)	" Aug. 1st, "
" 16	"Marvel"	.. (Wilson & Son)	" Sept. 1st, "
" 17	"Talmer"	.. (Talbot & Eamer)	" Oct. 1st, "
" 18	"The Omnigraph"	.. (J. Lancaster & Son)	" Nov. 1st, "
" 19	"Ubique"	.. (Perkin, Son & Rayment) ..	" May 1st, 1892
" 20	"Daylight Kodak"	.. (Eastman Company)	" June 1st, "
" 21	"The Radial"	.. (Marion & Co.)	" July 1st, "
" 22	"The Surprise"	.. (Levi & Son)	" Aug. 1st, "
" 23	"Perfect"	.. (W. Tylar)	" Sept. 1st, "
" 24	"Frena"	.. (R. & J. Beck)	" Oct. 1st, "

No. 25.—THE "METEOR."

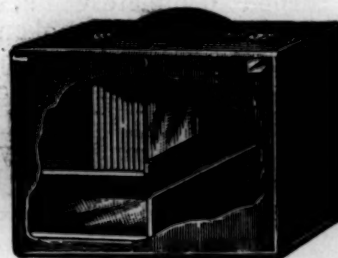
As has been our custom at this time of the year, we resume the description of hand-cameras; these being in great demand for obtaining views for lantern slides. Descriptions of several hand-cameras can be seen by reference to our journals as stated in the above list.

One of the latest hand-cameras, termed the "Meteor," has been put upon the market at 12s. 6d. by Messrs. Theobald & Co., of 43, Farringdon Road, E.C.

A dozen exposures may be made with one charging. The plates are inserted in sheaths and stacked in place as shown in cut by means of a door which opens at the back of the camera. Immediately behind the stack of plates is placed a spiral spring which serves to keep the front plate at the focal plane.

By an ingenious hook which engages with the

front plate, a slight turn of a knob near the top causes the plate to be liberated and to fall forward, when a slight tilt of the camera enables it to be sent into a compartment beneath the unexposed plates.



After each plate has in turn been exposed and transferred, they may be removed for development from the lower compartment which is in reality a drawer.

Immediately in front of the lens is a shutter, which is capable of giving either time or instantaneous exposures, and these can be given by turning one knob only. If turned to the right the lens is left open, and the exposure is terminated by pressing it towards the left, whilst if the movement be in the first instance towards the left an instantaneous opening and closing of the lens takes place.

Two finders are supplied to this camera, which carries quarter plates. The instrument measures $9\frac{1}{4} \times 5 \times 6\frac{1}{2}$ inches.

—:O:—

Oils and Lamps for the Lantern. No. I.

By W. H. HARRISON.

THE extent of the vast stores of petroleum in the earth is scarcely popularly realised, for the present consumption of it by man has been estimated at about three million gallons per day, and an authority from Trinity House stated about a year ago at the Society of Arts, that the petroleum supply will last long after the coal-fields of the world have been exhausted.

Some of the ancient large sources of natural production show no signs of giving out; for instance, the "sacred fires" of Baku are reasonably supposed to have been visited by fire-worshippers at least from the time of Zoroaster, who lived more than 600 years B.C. They were mentioned by Marco Polo in the Thirteenth Century, as good to burn and to anoint camels suffering from the mange, which is the earliest record bearing some relation to the fact that petroleum favours the growth of healthy heads of hair. It is supposed to kill the bacteria which some-

times attack the roots of the hair, and so produce baldness.

Petroleum, as it comes from the earth, differs according to the locality of its source, and consists chiefly of a mixture of numerous volatile hydrocarbons, some of them so volatile as to diffuse quickly in air at ordinary temperatures, just as does common gas, and so form an explosive mixture which is ignited by the application of a light. Hence the governments of various countries have been obliged to insist that the more volatile constituents shall be distilled off from the portions intended for household use in lamps or otherwise, and the extent to which the dangerous portions have been removed is indicated by what is called the "flashing-point" of the particular sample, or the temperature at which it will form an explosive mixture with air under stated conditions. The more dangerous part of the petroleum, the light volatile inflammable spirit distilled off, is so plentiful as to be a drug in the market, and in some countries, practically worthless; some of it is sold as "benzoline"; indeed, there are plenty of fancy names for different varieties of petroleum.

In Great Britain, under the Petroleum Act of 1871, the flashing-point was not allowed to be less than 100° F., but by the Petroleum Amendment Act, 1879, the permissible minimum flashing-point was reduced to 73° F., to be tested, however, under a more trustworthy system devised by Sir Frederick Abel; this makes the actual flashing-point virtually the same under both Acts, the difference being but in the apparatus with which the testing is performed.

Paraffin oil is distilled from a shale found in the South of Scotland, and is commonly sold for household use with a flashing-point of 95° F. to 105° F. by the Abel test, and some special brands are manufactured with so high a flashing-point as 250° F. The great freedom from lamp accidents in Scotland has been suggested to be due to the greater proportion of shale oil paraffin burnt there; perhaps, however, the better education of the working people north of the Tweed has something to do with the matter. Any legislation which raises the flashing-point of oils permitted to be sold, acts in commercial favour of Scotch *versus* foreign supplies, hence any outcry against the present legal flashing-point of petroleum or paraffin is liable to carry more weight when it emanates from England rather than from Scotland.

In November last, Mr. D. R. Stewart read a paper before the Glasgow section of the Society of Chemical Industry, in which he set forth that the 1871 legal test for the flashing-point was performed by gradually heating the oil in

an "open" cup, partly screened from draughts, and applying a light at intervals, but the vapours first given off diffused into the atmosphere, and a point far above the true flashing-point was thus obtained. The 1879 legal test is made by the "close" method, in which the cup is kept covered when being heated, and two little holes are opened for a moment when the light is applied; this gives the true flashing-point, and the lowest temperature at which an explosion may be expected. With this test different experimenters get the same results.

From what has been said it is evident that it would be a good thing for lanternists if some firm would sell them oils with guaranteed and stated flashing-points. The additional cost of samples with much higher flashing-points than those commonly sold to the public would not be worth consideration when the small quantity used in a lantern display in one evening is taken into account. There are also counterbalancing advantages in favour of good oils in the matter of illuminating power.

Mr. Stewart states that the 1871 test would give false indications to the extent of 20° F. or 30° F., and that the safety point for any country should depend upon the highest ordinary temperature of the climate; he estimates the highest ordinary temperature of this country at 70° F. at least, plus the heat developed in the ordinary lamp reservoir in "ordinary dirty order."

Practically, however, it is found that accidents in this country are chiefly due to other causes than the lowest legal degree permitted in the oil which may be used. Considering the heat developed in ordinary optical lanterns, especially when the lower openings for the entrance of cold air are smaller than they ought to be, an extra argument is supplied for the sale by lantern dealers of an oil of high and stated flashing-point from Scotland or elsewhere.

Nearly all the accidents with petroleum in this country have been due to the breakage of the lamps, chiefly, of course, those lamps made of glass, china, or other equally fragile substance. The very poor buy lamps of this kind for the sake of economy, and the rich frequently do so from ignorance. Accidents may sometimes be caused by too narrow and thin wicks, so that any mixture of air and vapour in the lamp may get at the flame, and an explosion result. Dirty burners with choked air-holes, also blowing down the chimney to put out the light when the wick is imperfectly trimmed, may be dangerous in rare instances; so also, says Mr. Bostock Hill, may be the turning down of a burning wick into the reservoir, or the existence of a filling-hole other than that through which the

wick passes. A practically safe, useful lamp, he says, could be made and sold for about eighteenpence. The lamps used in magic lanterns must, however, have a filling-hole other than that through which the wicks enter, but these lamps should never be replenished whilst the wick is alight.

We now come to an exceedingly important point, as to the amount of illumination obtainable with oil lanterns, namely, the nature of the wick, for some wicks will carry up to the flame about 40 per cent. more oil than others in a given time.

A good fitting wick is an important element in petroleum illumination and in the safety thereof, on buying a new wick it is best to take the burner to the vendor of the wick, so that a wick of the proper size may be fitted thereto. The burner should always be kept clean, and special care taken that none of its air-holes, or holes in any metallic gauge connected with it, are choked by dirt; a solution of washing soda may be used for cleaning the burner occasionally. New wicks are liable to burn better than old ones, as the latter gradually in time get somewhat choked by any minute solid impurities in suspension in the oil, and get "gummy" below the burner. A new wick must be thoroughly well dried before it comes into contact with the oil; this is exceedingly important, as any dampness tends to retard the flow of the oil. Many who use the petroleum light in the magic lantern prefer never to cut the wick, but to rub off the charred part with paper, so as to keep a good straight edge for even burning; it has, however, been stated that it is best to cut the wick, but only where it is charred and can be cut easily.

On the 13th March, 1885, an authoritative discourse was delivered at the Royal Institution by Sir Frederick Abel, on "Accidental Explosions by Non-explosive Liquids," in the course of which he set forth that some varieties of petroleum will travel along a wick more rapidly than will others, the wick being the same in all cases. Baku petroleum travelled with decidedly greater rapidity than did ordinary American petroleum, but an American sample of the highest quality was superior in this respect to the Baku oil used in the experiments. In the course of his remarks about wicks, the lecturer stated that the wick materially affects the burning quality of the lamp and its safety. A loosely plaited wick of long staple cotton draws up oil regularly and freely, and if the oil be not very heavy or of high flashing-point, the flame burns brightly and uniformly, with but little charring effect upon the wick, not extending to more than a quarter of an inch downwards until the

partial exhaustion of the oil supply diminishes the size of the flame, and induces the user to move the wick upwards; then more will be charred. If, however, the wick be tightly plaited and made of short staple cotton of low capillary power, the oil will be less copiously drawn up to the flame, the length of exposed wick will be greater, the wick will be exposed to more heat and become more charred. Wicks even of the higher qualities vary considerably. "In Mr. Redwood's experiments, conducted with a specimen of English wick of good quality and with a very superior American wick of corresponding dimensions, the quantity of oil siphoned over by the latter in a given time was from 35 to 47 per cent.—according to the nature of the oil experimented with—than that carried over by the English wick."

Sir Frederick Abel then went on to say that the wick must be well dried before put in the burner, and added that if the oil accidentally contain any water, the latter passing into the wick, will interfere with the proper feeding of the flame.

(To be continued).

—:o:—

A Lanternist's Diary.

BY AD-AMICOS.

"WHY, of course, I will drop you a few lines!" I said to myself the other morning as I carefully refolded a letter, with a tenderness that could only be looked for in a young lover, and replaced it in its envelope. "More than a few lines, dear old friend, will I send you," I continued, and I picked up the letter, turned it over again, read the post-mark—New Brunswick—which a few minutes before had so puzzled me, and was again unfolding the sheets of paper the postman that morning had brought with other letters, to again read and relish their contents, when the waiter of the "White Lion" touched me on the shoulder: "'Xcuse me, sir, which is it to be, kidneys or fish?" I chose the former, feeling, perhaps, a bone in the throat from the latter would not be improbable, and a few minutes later I sat in the coffee-room of the "White Lion" talking to myself, taking between whiles a mouthful of breakfast. But let me read a page of the manuscript to hand, which I hope the reader will accept as an apology for the writer's enthusiasm.

"It is nearly seventeen years ago since I lost sight of you, and now only know by mere coincidence that you are still in the land of mortals. . . . The hat affair, alluded to in your article, brought many happy thoughts to

mind no doubt you have mems of the most important. . . . Don't forget the Bull incident. Oh, and whatever you do, don't omit the nursery rhymes. I remember how red in the face you used to get, laughing yourself almost into convulsions when trying to learn your own concocted rigmaroles but the success was grand. I shall send by next mail a transparency of myself with family, taken outside our little shanty. . . . Be sure and write me a few lines, &c., &c., &c.—BOB."

Bob had read accidentally the opening paragraphs to these diary jottings in *The Optical Magic Lantern Journal*, and was thereby prompted to send me a letter.

It had been concluded that the faithful old assistant had gone over to the majority. Imagine, then, the writer's delight upon once more being privileged to correspond with him. Certainly the post is a great boon, and is not appreciated half enough.

Halloa! what's this? Looks like something that hardly harmonises with what I've just written:—

"May 29th, 1872.—Had about a dozen slides and negatives broken in transmission per post. Two o'clock. Am told at office I cannot claim redress. Post authorities laugh at my (to them) stupidity."

This has reference to a set of sporting slides made from direct negatives, which we took, after much trouble, on the Yorkshire hills, while touring. The Squire's dog, "Judy," was a fine picture, a rabbit being under her forelegs and another between her teeth. A special song was sung while the set was passed through, in fact, the song is the only souvenir left. They were out on loan, and broke on the return transit. The music to the verses is in good preservation, and although cannot be published in these pages, the words may serve a slide or so of the nature described, and are here printed for the first time.

THE FIELDS DELIGHTS.

By Jove here's a morning,
I knew it last night, when
I saw the sun sink in his bed of rich gold;
Yes, I felt pretty sure that
My friend and I might, then
Anticipate rambles and pleasure untold.
Ah! wine hath its blisses,
And love hath its kisses,
And boating and flirting uproarious fun;
But nought can surpass,
Unless I'm an ass,
The delights that I feel with my dog and my gun.

Yes, "Judy" and I, ere
The sun sets, for certain
Will settle the hash of some rabbits and hares.
My heart feels so light,
As I draw back the curtain,
I'm tempted to steal out just now unawares;

Some days it is raining,
Our optics we're straining,
To catch but a glimpse of the hide away sun,
So I'll not be scorning,
This glorious morning,
But hasten away with my dog and my gun.

"June 27th, 1872.—Paid an early morning visit to the 'Magpie' Lead Mine, Derbyshire, for the express purpose of taking photos for lecture now in preparation. Light very bad; no results. Peeped down shaft, which was teaming with water, and considered myself safer on *terra firma*."

"October 31st, 1872.—Gave a new reading of an old story, 'This is the house that Jack built.'"

"The edifice erected by John" is one of the nursery stories Bob refers to. We amused the youngsters and middle aged with it on many occasions, and hope to do again, an ordinary set of slides on the subject will do. The crudest often are the most amusing.

JOHN'S EDIFICE.

Slide 1.—Ladies and gentlemen, this is the edifice erected by John.

Slide 2.—This is the agricultural produce, deposited in the edifice erected by John.

Slide 3.—This is the obnoxious vermin that devoured the agricultural produce, deposited in the edifice erected by John.

Slide 4.—This is the feline domestic animal that destroyed the obnoxious vermin, that devoured the agricultural produce, deposited in the edifice erected by John.

Slide 5.—This is the canine quadruped that distressed the feline domestic animal, that destroyed the obnoxious vermin, that devoured the agricultural produce, deposited in the edifice erected by John.

Slide 6.—This is the bovine animal that elevated the canine quadruped, that distressed the feline domestic animal, that destroyed the obnoxious vermin, that devoured the agricultural produce, deposited in the edifice erected by John.

Slide 7.—This is the solitary but interesting looking spinster, who lactuated the bovine animal, that elevated the canine quadruped, that distressed the feline domestic animal, that destroyed the obnoxious vermin, that devoured the agricultural produce, deposited in the edifice erected by John.

Slide 8.—This is the dilapidated looking individual, who greeted with tender osculations, the solitary but interesting looking spinster, who lactuated the bovine animal, that elevated the canine quadruped, that distressed the feline domestic animal, that destroyed the obnoxious vermin, that devoured the agricultural produce, deposited in the edifice erected by John.

Slide 9.—This is the ecclesiastical looking functionary, who joined in hymnial rights, the dilapidated looking individual, who greeted with tender osculations, the solitary but interesting looking spinster, who lactuated the bovine animal, that elevated the canine quadruped, that distressed the feline domestic animal, that destroyed the obnoxious vermin, that devoured the agricultural produce, deposited in the edifice erected by John.

Slide 10.—This is the winged biped, whose shrill clarion, disturbed the slumber of the ecclesiastical looking functionary, who joined in hymnial rights the dilapidated looking individual, who greeted with tender osculations, the solitary but interesting looking spinster, who lactuated the bovine animal, that elevated the canine quadruped, that distressed the feline domestic animal, that destroyed the obnoxious vermin, that devoured the agricultural produce, deposited in the edifice erected by John.

(To be continued.)

Stages for Bi-unial and Triple Lanterns.

BY A. R. WALKER.

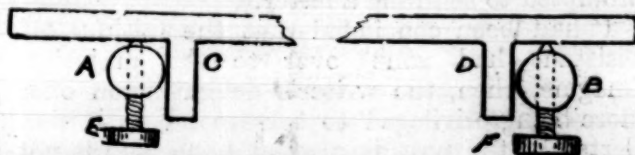
It appears that some of the writers on the subject of registering lanterns have endeavoured to make things somewhat complicated. Of late, two illustrations have appeared in this journal, both with the intention of showing how two or more lantern fronts can be quickly registered. Of the two, that on page 20, by Mr. Norton, is the better in practical use; whilst that on page 63, in last issue by Mr. Stoffell, is the better from a theoretical point of view. Unfortunately in this case as in many others, theory and practice are two totally different matters.

Mr. Norton's runner is so fitted with four pointed screws, that the runner is greatly weakened, and there is great chance of straining or bending the screws themselves, owing to the points acting as a wedge on the pillars, and as great nicety is required it is necessary that the cone points be quite true and central, for once the screw becomes bent registration then becomes chance-work.

With the eccentric, great strength is certainly obtained without any undue strain; but to raise or lower the eccentric a small fraction of an inch, and whilst holding it in position to clamp it at the required height is an almost impossible job, and one calculated to exhaust the patience of the most saintly lanternist, true, the principle is first rate, but the application is bad.

I have made the major portion of my lanterns myself and with my mode, registering can be done (so to speak) in the twinkling of an eye, and with the utmost certainty. A few words and a sketch will describe it, and should Messrs. Norton or Stoffell or in fact any reader have any fault to find with this ready method, I shall be glad to hear what they have to say.

In the following sketch A and B represent a section of the pillars upon which the metal runner C D rest. In common with runners in general I make a projection at the lower side to project downwards at the side of the pillar to keep the runner in its place.



In the pillars A and B drill two holes and tap them with a thread, and into them screw the thumb-screws E and F.

When occasion arises to heighten one or other end of the runners, a turn or two of the thumb-screws will effect this.

For side or end registration I use the usual bar and screw, and with the stages of a bi-unial or triple lantern fitted in the manner I have described, I venture to state that there is no simpler method of registering a lantern. With the aid of Mr. Norton's templates, and the mode of adjusting I have described, failure is impossible.

Gas-bags and Cylinders.

BY J. G. THOMPSON.

THE use of compressed gases for the production of limelight has, during the past few years, become the means most adopted by lanternists of the present time; and their portability, safety, and intense brilliancy of light, is something which deserves our gratitude for the improvements which have placed them in their present position.

Although the compressed gas system has many advantages over the old style of gas-bags, it is not altogether exempted from certain disadvantage, hence the reason of the present use of bags amongst so many professional exhibitors.

If pumping or compressing plant were to be met with in or near the district where the exhibitor sets up, this would overcome the expense entailed for carriage of cylinders when sending them to be recharged; but as things

remain at present in the country, where the mixed jet lime-light is nightly in use at a considerable distance from compressors, bags will hold sway. For mixed jets and with oxygen compressed, the hydrogen is also used from a cylinder, and considerable expense is incurred in carriage, which to professional exhibitors (who Mr. Norton truly says in a recent article, are not millionaires) is a great item. This will, I think, explain why gas-bags are still popular.

Many arguments have been set forth respecting the liability of an accident when using bags in conjunction with mixed jets, and the explosion at Ilkeston some time ago proved a thorn in the way of many who use bags.

In the Ilkeston case, as in all others, there was, I feel assured, a cause that could with precaution have been prevented. In this case I have authority for saying that in my idea the mishap was caused by a boy placing his feet upon the pressure boards in order to get over into the front seats, the building being in darkness and the jets burning ready to commence the entertainment. It will be remembered that it was about this time that the explosion occurred. It is always well to place a temporary fortification round gas-bags, and had this been done in this case cited, everything might have gone well.

With bags the gases should always be tested previous to an audience being admitted.

It is absurd for anyone to suggest that bags are more dangerous than cylinders when in experienced hands, and I feel assured that the writers of letters in our newspapers, stating the danger (?) of bags, are placed there in the interests of those whose commercial interests lie in the compressed gas system. In a letter published in a Manchester paper, the writer goes on to say, "No accidents has occurred to the public though thousands of cylinders are now in use, whereas when bags were in general use fatal accidents as at Ilkeston take place every year."

Although this theory is laid down for us to accept, we are in no way obliged to adopt it, and I for one would not feel justified in accepting a one-sided opinion.

There are in the market back pressure valves, and a pair of these used on supply tubes placed as close to lantern as possible coupled with common-sense, precautions would prevent any accident when mixed jets are supplied from bags.

In concluding my remarks I trust that it may lead to further discussion regarding the use, abuse, safety, and danger of the old but never to be despised system of gas-bags.

Correspondence.

INVENTION OF DISSOLVING VIEWS.

[To the Editor.]

DEAR SIR,—In the March number of this journal there appears an article by Mr. Harrison, in which he finishes up same by asking the question "Who invented Dissolving Views?" I must say that I felt somewhat amused upon reading this as I certainly thought the fact was too well known at home and abroad. Evidently the person of whom Mr. Harrison got the information from, viz: that dissolving views were first brought over here by an Italian, could not have known much about what he was speaking of. No doubt he had heard a somewhat vague account about the German Professor Phillipstall, who brought over to this country one lantern, and with it exhibited blocked out figures (coloured) through a transparent screen, of course manipulating the lantern at back of same. The lantern was brought up close to screen, so that the figure projected would appear small, then by moving the lantern backwards the figure increased in size, and appeared to be advancing as though about to come among the spectators, all this helped to carry out his very mysterious entertainment, which he called the "Phantasmagoria." He would have the place in total darkness, so that it was impossible for his audience to see the front curtain roll up, leaving his transparent screen ready for action. When all was ready he would creep about and then say "Hush, hush, de ghost! hush, de ghost!" so as to give all possible mystery to his proceedings.

Not many years after Phillipstall, Mr. Childe and myself, invented and brought out dissolving views, as is too well known for me to say more, although Mr. Harrison appears to be very much in doubt, but perhaps after this he will feel more confident in believing the fact that Childe and Hill were the sole inventors and nobody else.—Yours truly,
Tufnell Park, N.

W. R. HILL,
(W. R. Hill & Son).

SIR,—With much amazement I read the astonishing theory put forth by Mr. Edmond Wilkie, in the April number of your journal, *re* "The invention of Dissolving Views." I have no desire to underestimate the good opinion that gentleman has of his own capabilities, or of the apparently inexhaustable store of information he so generously places before the readers of your interesting Journal. Without doubt it would be exceedingly valuable if the information he obtained had been correct. My object in writing this is to point out that Mr. Wilkie has apparently drawn largely on his imagination, so palpably indeed that I feel it necessary to give a few facts relative to this matter, for the benefit of those interested in lantern work.

In the first instance I am in a position to contradict the statement that Mr. Childe had any collaborateur whatever in his production of the Dissolving Views, and that Mr. Hill was a joint inventor and a co-partner at the time, is too ridiculous to contemplate, as they were evidently invented before either Mr. Hill or Mr. Wilkie were born. I have in my possession some programmes of dissolving view entertainments given by Mr. Childe, one referring to an exhibition at the Theatre Royal, Brighton, under the management of Mr. Yates, over sixty years since, on which it is stated, that the dissolving views were exhibited (at the Adelphi Theatre, London), previously with great success. And another of an exhibition of "Mr. Childe's Dissolving Views" at the

Theatre Royal, Norwich, dated 1834. And a third at Her Majesty's Theatre, London, dated 1839. Now Sir I hope this will satisfy our good friend Mr. Harrison, and also Mr. Wilkie.

The uncalled for statement in reference to the ability of Mr. Childe seems an insult to the memory of one who was evidently a mechanical genius, as well as an artist of undoubted repute.

Should your last issue fall into the hands of Messrs. Hine, Fid Page, Cadman, and other artists who designed a great number of the pictures for the late Polytechnic Institution, they will read Mr. Wilkie's statement with much surprise.—I am Sir, Yours Obediently,
SUUM CUIQUE.

SIR,—I was pleased to see the article in last issue of your valuable journal from my old friend and colleague Mr. E. H. Wilkie, on the invention of dissolving views, as practical information from an experienced person is a treat, especially when (nowadays) so-called experts spring up like mushrooms in a night, and after purchasing a lantern or camera proceed to give instruction as to how this and that *should* be done.

Mr. Wilkie says "that the Polytechnic entertainments were first decided upon by the Directors (quite correct), and the names of the views were then given to Mr. Hill, to design, construct, and paint." In some cases that may have been correct, but certainly not in all. For instance, the splendid designs for "Alladin" were designed by my friend Fid Page; and many other subjects were designed by other well-known artists. The late Mr. Leitch, one of whose last pictures was, I believe, the "Market Place" in the entertainment "Curried Prawns," given by my old and intimate friend the late Geo. Buckland, was sketched in water colours and handed over to Mr. Hill to reproduce on glass for the lantern. The pictures of the "Gambling Table at Monte Carlo," the "Cabinet Scene," in the illusion of "Metempsychosis," the disc pictures for Dr. Crofts second production of "Jane Conquest," the "Wooden Horse" in the "Siege of Troy," the effect of the late Charles Dickens in his study at Gads Hill, scenes in "Alice in Wonderland," and a great many others were given to me to design, photograph, and paint.

The well-known Holy Land pictures from David Roberts' water colour sketches were painted by the late Mr. Smith. There were many other artists whose names I could mention who contributed to the good old Polytechnic besides Messrs. Childe and Hill.

I have seen most if not all of the effects produced at the Polytechnic, and I never saw anything to equal those by Mons. Danguy, of Paris, whom I had the pleasure of introducing to the Board of Directors, with a view to producing his marvellous entertainment at the Institution, but, unfortunately, the old Institution was shortly after the introduction, wound up.

M. Danguy's illusions and effects thoroughly astonished me, all his pictures were mechanical, complicated, and wonderful, entirely different to anything we had in the Institution. In his fire scenes he completely burned the building down; brought railway trains out of tunnels in full view of the audience in a most natural manner, and not in the usual way we had been used to see it go across the picture. He could also take a boat round a ship at anchor, and many other startling effects such as had never been done at the Polytechnic. The light he used was such as would permit of his operating in a room lighted by gas, and his entertainments necessitated the use of as many as nine lanterns at one time, all worked in secret by himself and assistant.

M. Danguy had been thirty years in perfecting his

apparatus and making his own mechanical frames, and he possessed medals and diplomas from all the Art and Instruction Departments in France.

It will thus be seen that others have had a finger in the (dissolving view) pie as well as Messrs. Childe and Hill.

Not very long ago I heard it was given out that your humble servant was dead, but I am pleased to say I am still in the flesh and able to paint, photograph, and design as well as ever I did, and that my services are more in demand than they were in the old Institution.

In conclusion I am proud to say that I photographed and painted the slides used at the last entertainment at the old Polytechnic, and also that I have had the honour to receive an engagement to photograph and paint for the present Polytechnic Institution.—Yours faithfully,
J. GREEN.

(Optical and Scenic Artist to the late Royal Polytechnic, Drury Lane and other London and Provincial Theatres.)

Upper Holloway, N.

GASES AND GAS-BAGS.

(To the Editor.)

SIR,—I am sure the thanks of your readers are due to Mr. C. G. Norton for his very lucid letter in your April part. I am not concerned as to the market for gas-bags, the chief point in my former letter being that home made oxygen is cheaper than compressed oxygen when carriage has to be paid, and when Mr. Norton remarks that "all lanternists are not millionaires," I agree with him entirely. I did not say I could make oxygen at 2½d. per foot, I said under 2½d., which makes a difference. Also the figures I gave referred to ingredients only, chlorate of potash at 8d. per lb., and manganese 18s. per cwt., or 7 lbs. for 1s. 1½d. I am aware chlorate has gone up some 40 per cent. lately, but last summer could be got for 7½d. per lb., but even at 1s. per lb. gas from it would be cheaper than compressed oxygen when an item for carriage of cylinder each way has to be added, unless one uses a very large cylinder.

The time item I have disposed of, the firing usually takes the form of a gas stove, and the wear of retort may perhaps be set against the wear of cylinder, as although a certain class of retort enjoys a long life, no cylinder will last for ever, and now that compressed gas has been in vogue some years, it would be interesting to know what per centage of the older cylinders fail on being retested. The difficulty as to weights can be got over by stipulating for their supply when accepting an engagement on giving an exhibition. So far I have referred to oxygen only, when we come to a mixed jet, the cylinder user has to pay for coal gas at the rate of something like £9 per 1000 cubic feet, the same amount costing the bag user three or four shillings, so that the beauties of the compressed gas system need no further comment. It is this expense which has led to the very reprehensible practice referred to by Mr. Norton. Considering the number of limelight experts one hears of, and the number of books going on lantern work, one occasionally finds peculiar methods of working adopted. A little while ago at a public exhibition, I saw the safety jets of a bi-unial lit up under the following circumstances; they were connected as usual to a 6 way tap, the oxygen side of which was connected to a cylinder, fitted with Beard's reguator, and the hydrogen side to a bag which had been filled from the main, and was laid on the floor with no board, weight, or pressure whatever upon it. Curious was it not?—Yours faithfully,
EXPERT.

REGISTERING LANTERNS—BAD GAS.

[To the Editor.]

SIR,—I am sure that all lanternists ought to be obliged to Mr. F. Stoffell for his admirable invention for registering lanterns. The system may be described as perfect, save in a few minor details, such as (1) the fact that a cam or eccentric can never be depended upon to remain in its place when any pressure is exerted against it. (2) There is no means by which the cam can be turned except by the use of gas tongs, which are not calculated to improve the appearance of lantern fronts. (3) This system can only be applied to lanterns made to order, which is a fatal objection, unless it is the best way of securing the end in view, which is that the movement shall be simple so as to be managed in the dark, and the runner not liable to shift when once adjusted.

With reference to the nut F, which Mr. S. says is to tighten B, this action must bend the plate holding the front tubes; perhaps here the gas tongs will come in useful. Finally Mr. Stoffell writes that— I spoke of my own runners as being essential to registration—this is not quite correct, what I said was "that mine would do all that is required, and could be adapted to any lantern," but when a lantern is built to order for special requirement, which adds at least 50 per. cent to its cost, I use a totally different pattern, particulars of which I shall be pleased to give at some future time.

We have heard a good deal lately about inferior qualities of oxygen gas, but very little about inferior compressed coal gas. Several times this season I have used coal gas, which has discoloured the lime, not from smoke as usually understood, and always attributed it to the coal gas having been kept too long, and partially decomposed by reason of the pressure or other cause.

But last week I had occasion to use coal-gas which had only been compressed the day before. Great difficulty was experienced in maintaining a light, as there was a deposit being continually formed at the orifice of the jet which I could only remove by knocking it off with a hair-pin, which I had to keep at hand for the purpose.

As the lantern (a single one) was used to show pictures at a public lecture of two hours without a break of any kind I had a lively experience of it, the light bobbing up and down the whole time, besides nearly blinding myself with the glare when endeavouring to remove the deposit without causing a shadow to appear on the picture, and as a last straw several irate messages from the lecturer, who could understand nothing about the matter except that he must have a brilliant and steady light.

Perhaps some reader learned in the science of chemistry can suggest a remedy, as these mishaps generally occur when one is in the country fifty miles from everywhere, and a fresh supply of gas an impossibility.—Yours, &c.,

C. GOODWIN NORTON.

Marchmont Street, W.C.

MR. T. FLETCHER ON TRIPLE CONDENSERS.

[To the Editor.]

SIR,—It would be manifestly unfair to me to close this correspondence with Mr. Fletcher's reply to Mr. Harrison and myself.

In the first place Mr. Fletcher wrote a letter disparaging the use of triple condensers; and as this is a subject to which I have paid considerable attention, and made a distinct and an acknowledged advance upon all previous efforts, and also a subject which Mr. Fletcher—after he has been shown to be wrong—now confesses he knows

nothing at all about, it would be interesting to know why he wrote about it in the first place. Surely he must have some reason, or is it some old sore not yet healed up?

But the present injustice to me is that in Mr. Fletcher's reply he accuses me of "getting in a temper."

I do not think many of your readers would say that in my reply to Mr. Fletcher there was any display of ill-temper. Of course I did not flatter the Mr. Fletcher as Mr. Harrison did, I did not consider his letter called for any compliments, so I discussed the subject on its true scientific merits.

W. I. CHADWICK.

STOPPING GAS-BURNERS, &c.

[To the Editor.]

DEAR SIR,—Another dodge for blocking spare gas-burners when necessary to connect to them is to use a piece of tubing and fasten it on two burners—that is to say, if you have a 3-light bracket, connect lantern tubing to one burner and then connect the other two together by means of a piece of I.R. tubing.—Yours, as usual,

JAMES W. GARBUTT.

Armley, Leeds.

NEW NAME FOR MAGIC LANTERN.

[To the Editor.]

SIR,—Your correspondent, W. C. S., is entirely right in saying that any change of name of magic lantern would take many years to be universally adopted.

I am not at all sure if it would be desirable that any such change of name should be recommended. He is right in his adverse comments upon the name Stereopticon, adopted by some Americans. This is altogether a misleading title, as there is nothing stereoscopic about the lantern.

A much better name than this was adopted several years ago by one firm at least. This was Artopticon, to which there cannot be any valid objection; nor could any objection be found for the word Sciopticon, although this term is now applied to a definite make of lantern.

The term Optical Lantern is, I think, an incorrect one, for this, as your correspondent observes applies to a bicycle or other lamp having a condenser in front of, or a reflector behind the flame.

Projecting Lantern, although he states it to be equally out of place, is better than a great many others that may be applied, the object of a lantern being to project an image, which it does; but all things considered, if the good old-fashioned term Magic Lantern is to be ejected from its time-honoured place (and I hope not) then I would propose the now disused Artopticon as the most fitting successor.—Yours, &c.,

Newcastle-on-Tyne. ARTHUR W. JOHNSON.

A list of names are given in "Notes," p. 73.—ED.

A GRAND ENTERTAINMENT.

[To the Editor.]

SIR,—Most of you have heard of the fine effects produced with the lantern at the old Polytechnic. Is it not possible that those holding the pictures might be persuaded to loan them for the purpose of giving a grand entertainment in remembrance of former days?—Yours, &c.

A.B.C.

Notes and Queries.

J. Stockinger says: I have bought a lantern and fittings from—To the mixed gas jet were attached, by means of rubber tubes, two cylindrical bodies, something like sketch enclosed, which the seller called flame extinguishers. 1, Must the gas from the cylinder pass through a regulator when using these extinguishers, or are they kind of regulators by themselves? 2, For what use are these flame extinguishers? 3, I want to fit up a triple lantern using my single one as a part, must the other two lanterns have lenses of the same style and focus? 4, Can you give me any hints on using a triple? *Reply*.—1, You can either use the gas direct from cylinders or employ a regulator, the extinguishers do not regulate. 2, The so called flame extinguishers which we think you will find contain pumice powder are of no use, they are a mistaken idea. 3, You must provide the other parts of your triple with optical parts of the same foci as the one you have if it is to be used in conjunction with it. 4, You will find particulars *re* management in this journal for February, page 18 to 23.

G writes: Can you give me particulars of copper bromide intensifier for wet plate (collodion) negatives? *Answer*.—Make the following solutions—A, bromide potassium, $\frac{1}{2}$ oz.; water, 4 oz.; B, sulphate of copper, $\frac{1}{2}$ oz.; water 4 oz. Mix equal parts of A and B and pour on film, and when it is whitened, blacken with a solution of nitrate of silver, 30 grains, to the oz. of water. For still greater intensity use hydrosulphate of ammonia solution, 1 part in 4 parts water, after the bromide of copper and thorough washing.

J. D. Devis writes: I have been using the lantern (oil) during the past two seasons, I have used it about 25 times this winter; on a late occasion the lamp puffed out three times one evening, and once another night. 1, Can you tell me the cause of this. I paid 1/6 a gallon for the oil and have since used the same oil and it burned all right? 2, My lamp is of Russian iron, and when put away gets rusty in small patches, what will prevent this, would it be well to japan it? 3, What japan will stand the heat? 4, Can you tell me of a carrier that acts as a dissolver for single lantern, and which allows the slides to be put in at one side only? *Answer*.—1, Perhaps the ventilation at the bottom was deficient. 2, When putting the lamp away give it a very thin coating of vasaline. 3, Japan will not answer. 4, It all depends upon the meaning you attach to the word dissolving, write for particulars of changing carriers to Mr. W. C. Hughes and R. R. Beard, you will find their advertisements on another page.

Light.—It is not the lime, but the hydrogen gas that is at fault.

Saturator.—If you have a good charge of (say) ether in your Lawson saturator you can turn it out as quickly as you please, without getting any snap or pop, but if the charge is nearly exhausted you may get a slight but harmless pop on turning off.

J. G. Thompson.—(1) Mr. Philip Phillips' address is New York. (2) Some operators who use bags pretty constantly, provide themselves with a new one at the commencement of each season, but with occasional use and care they will last a long time. (3) Place forms or chairs around the gas bags to keep the small boy off, or four posts and a rope stretched from each may answer the purpose. (4) You can get slides with the words of hymns, but we have not seen scenic views to represent each few lines. (5) Dip the suspected corner of the bag

in water and observe if any air bubbles rise to the surface. (6) We know of no one who supplies large sized pictorial posters for advertising lantern entertainments. (7) Practically there is no difference in the light given by pure hydrogen and house gas in a mixed jet. (8) The action of sulphuric acid on zinc will generate hydrogen. One part of sulphuric acid to seven parts of water; to a gallon solution of this use $1\frac{1}{2}$ lbs. of scrap zinc.

T. G. Parvin, H. J.—Replied by post.

Cheetham.—It is evident that your stage is too far from your 4 inch condenser, and thus the corners get cut off; with a condenser of this size the slides must be quite close to it.

Oxygem asks: Can you tell me anything of oxygen made by a firm called Webb, also where is their place? *Answer*.—We know nothing of it, except that there is or was a firm of this name, but cannot give the address.

M. L. asks: 1, Supposing that oxygen gas and ether vapour where to pass together in equal proportions through a tube two feet long, would there be any danger attending it? 2, Is oxygen in any way explosive when in contact with methylated or benzoline ether? *Ans*.—1 and 2, The mixture is perfectly safe in a tube any length supposing no light be present. The mixture is explosive, but the force (under conditions) is governed by the capacity of the vessel containing it, thus an explosion in an ordinary tobacco pipe stem would be harmless, whilst if in an ordinary sized room the result would be of a disastrous nature.

Amateur.—We have received the lantern slide you sent, it is evident that you placed the plate wrong side up in the developing dish, and that an air bubble underneath prevented the solution from coming in contact with the film.

Fred. (Dover).—You can obtain teats suitable for stopping up gas burners at any chemists or oilshop, they are of the kind used for baby comforters and have no hole in the end. If you cannot get them thus, you might get them off feeding bottles, these have a fine hole but perhaps you can close them by means of cement. If you cannot even obtain this, use a piece of rubber tubing with one end stopped up, or connect two burners with one piece of tube.

M. Carew (Philadelphia).—Yes, your surmise is quite correct, J. Hay Taylor, Editor of this journal, is the son of J. Traill Taylor, Editor of *British Journal of Photography*.

R. B.—Very much overexposed.

Dealer.—We do not know whether another photographic exhibition will be held at Crystal Palace next year.

Condenser.—1, It is not protected. 2, A circular glass has a portion unused with a square picture, and this can be cut off if necessary, but it does not make any difference in illumination for the size of picture you mention.

ILLINGWORTH'S Photographic works form quite a landmark at Willesden Junction, S.W. In a list just to hand we observe enlargements on various surfaces are undertaken, also the development and printing of films, negatives, &c., In fact everything that can be done from an exposed plate is undertaken, from a printing of a few c. d. v., to the enlarging, painting, and framing of a picture. From the prices quoted they should secure good patronage.